## We need Directed Acyclic Graph (DAG) for topological sort

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Topological Sorting (DFS)

Linear ordering of voitices guels that y

there is an edge bolume ell v, is appears befor v in that ordering.

5 > 0

4 > 0

5 + 2 3 | 0

5 > 2

2 > 3

2 | 1
```

```
class Solution
    //Function to return list containing vertices in Topological order.
    static int[] topoSort(int V, ArrayList<ArrayList<Integer>> adj)
       // add your code here
       Stack<Integer> stk = new Stack<>();
       boolean[] vis = new boolean[V];
       for (int node = 0; node < V; node++) {</pre>
           if (!vis[node])
               dfs(adj, node, stk, vis);
       int[] res = new int[V];
                                                             Using DFS
       int idx = 0;
       while (!stk.isEmpty()) {
            res[idx++] = stk.pop();
        return res;
    private static void dfs(ArrayList<Integer>> adj, int node, Stack<Integer>> stk, boolean[] vis) {
        vis[node] = true;
       for (int ng: adj.get(node)) {
           if (vis[ng])
           dfs(adj, ng, stk, vis);
       stk.push(node);
```

## Another approach is using the inorder

- 1. Create adjacency list
- 2. Use BFS and add all nodes with indegree zero to initial queue
- 3. for each popped node for all it's neighbors decrement the indegree of the neighbor and if it's zero add it to queue
- 4. At the end we have traversed all the nodes in topological sorting order.